

Please add the following claim:

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19. (new claim) A method for increasing efficiency of a marketing system, the system comprising a database containing customer demographic data, said method including the steps of:

- building models of predicted customer profiles;
- embedding the models within an online analytical processing tool; and
- generating scores for a prospective customer in the database based on the predicted customer profiles wherein the online analytical processing tool determines a sequential order for combining the models and generates the scores by combining the models.

#### Remarks

The Office Action mailed May 21, 2002 has been carefully reviewed and the foregoing amendment has been made in consequence thereof. Submitted herewith is a Submission of Marked Up Paragraphs and Claims.

Claims 1-19 are pending in this application. Claims 1-18 stand rejected. Claim 19 has been newly added.

In addition, and in accordance with 37 C.F.R. 1.136(a), a one month extension of time is submitted herewith to extend the due date of the response to the Office Action dated May 21, 2002, for the above-identified patent application from August 21, 2002, through and including September 21, 2002. In accordance with 37 C.F.R. 1.17(a)(3), authorization to charge a deposit account in the amount of \$110.00 to cover this extension of time request also is submitted herewith.

Applicants note the objection to the specification with respect to the spacing of the lines. The Patent Rules provide that “[t]he lines of the specification, and any amendments to the specification, must be 1 ½ or double spaced.” (See 37 CFR § 1.52(b).) The present specification was submitted with 1 ½ line spacing in compliance with the Patent Rules. However, although Applicants respectfully submit that double line spacing in the specification is not required, in an effort to expedite the prosecution of this application, Applicants have amended the specification by providing double line spacing. Other than the double line spacing, no other changes have been made to the specification, and no new matter has been added. Accordingly, Applicants respectfully request that the objection to the specification be withdrawn.

The rejection of Claims 1, 4, 5, 9, 10, 12, 13, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Melchione et al. (U.S. Patent No. 5,930,764) (“Melchione”) is respectfully traversed.

Melchione describes a sales process support system and a method for identifying sales targets using a centralized database (10). Central database (10) receives information from a variety of internal and external feeds (21-25), and standardizes and households the information in a three-level hierarchy, including households, customers, and accounts, for use by a financial institution. The information stored on central database (10) is accessed through micromarketing workstations (12) to generate lists of sales leads for marketing campaigns. A database engine (40) is provided for accessing data on central database (10). Contact strategy models are used to identify and target sales leads for each sales campaign. The system distributes sales leads electronically to branch networks, where the sales leads are used to target customers for marketing campaigns.

Claim 1 recites a method for increasing efficiency of a marketing system that includes a database containing customer demographic data, and the steps of “building models of predicted customer profiles, embedding the models within an online analytical processing tool, and generating scores for a prospective customer in the database based on the predicted customer

profiles wherein the online analytical processing tool generates the scores by combining the models.”

Melchione is cited for teaching a scoring system, models developed from customer profiles, and predictions based on the customer profiles. Although Melchione does describe a comprehensive, customized lifetime value score to be determined for each customer at Column 42, lines 52-53 and contact strategy models used to identify and target sales leads at Column 43, lines 5-6, to the extent understood, Melchione does not describe nor suggest a method for increasing the efficiency of a marketing system including building models of predicted customer profiles, embedding the models within an online analytical processing tool, and generating scores for a prospective customer in the database based on the predicted customer profiles wherein the online analytical processing tool generates the scores by combining the models.

More specifically, Melchione does not describe nor suggest embedding models within an online analytical processing tool, and generating scores for a prospective customer wherein the online analytical processing tool generates the scores by combining the models. Rather, Melchione describes a sales process support system for identifying sales targets that includes a central database that receives and standardizes information for use by a financial institution in generating lists of sales leads for marketing campaigns. Accordingly, Applicants respectfully submit that Claim 1 is patentable over Melchione.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claim 1 be withdrawn.

Claims 4, 5, and 9 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 4, 5, and 9 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 4, 5, and 9 likewise are patentable over Melchione.

Claim 10 recites a system configured for targeting market segments that includes a customer database, a graphical user interface for entering marketing campaign data, and “models

of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool, said online analytical processing tool configured to combine said models.”

Melchione does not describe nor suggest a system configured for targeting market segments that includes a customer database, a graphical user interface for entering marketing campaign data, and models of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool, wherein the online analytical processing tool is configured to combine the models. More specifically, Melchione does not describe nor suggest models of predicted customer profiles that are embedded on an online analytical processing tool, wherein the online analytical processing tool is configured to combine the models. Rather, Melchione describes a sales process support system for identifying sales targets that includes a central database that receives and standardizes information for use by a financial institution in generating lists of sales leads for marketing campaigns. Accordingly, Applicants respectfully submit that Claim 10 is patentable over Melchione.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claim 10 be withdrawn.

Claims 12, 13, and 18 depend, directly or indirectly, from independent Claim 10. When the recitations of Claims 12, 13, and 18 are considered in combination with the recitations of Claim 10, Applicants submit that dependent Claims 12, 13, and 18 likewise are patentable over Melchione.

Additionally, Applicants respectfully submit that the Section 103 rejection of Claims 1, 4, 5, 9, 10, 12, 13, and 18 is not a proper rejection. The mere assertion that such an apparatus would have been obvious to one of ordinary skill in the art does not support a prima facie obvious rejection. Rather, each allegation of what would have been an obvious matter of design choice must always be supported by citation to some reference work recognized as standard in the pertinent art, and Applicants given an opportunity to challenge the correctness of the assertion or the repute of the cited reference. Applicants have not been provided with the

citation to any reference supporting the combination made in the rejection. The rejection, therefore, fails to provide the Applicants with a fair opportunity to respond to the rejection, and fails to provide the Applicants with the opportunity to challenge the correctness of the rejection. Therefore, Applicants respectfully request that the Section 103 rejection be withdrawn.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claims 1, 4, 5, 9, 10, 12, 13, and 18 be withdrawn.

The rejection of Claims 2, 3, 11, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Melchione in view of Pham et al. (U.S. Patent No. 5,970,482) (“Pham”) is respectfully traversed.

Melchione is described above. Pham describes a data mining system (3000) that includes a study manager (3010), a knowledge model engine (3070) coupled to study manager (3010), a discovery manager (3020) coupled to knowledge model engine (3070), an evaluation manager (3030) coupled to knowledge model engine (3070), and a prediction manager (3040) coupled to knowledge model engine (3070). System (3000) permits discovery, evaluation, and prediction of the correlative factors of data, i.e., the conjunctions, as corresponding to neuroexpressions (a semantic connection of neuroagents) connected to an output neuroagent that corresponds to the data output.

Claims 2 and 3 depend from independent Claim 1. Claim 1 recites a method for increasing efficiency of a marketing system that includes a database containing customer demographic data, and the steps of “building models of predicted customer profiles, embedding the models within an online analytical processing tool, and generating scores for a prospective customer in the database based on the predicted customer profiles wherein the online analytical processing tool generates the scores by combining the models.”

Pham is cited for teaching using an online analytical processing tool (OLAP) and building a knowledge model to predict behavior. Although Pham does describe OLAP at

Column 13, line 7 and using data mining tools to build a knowledge model at Column 13, lines 39-42, to the extent understood, Pham does not describe nor suggest the claimed invention.

Neither Melchione nor Pham, considered alone or in combination, describe nor suggest a method for increasing efficiency of a marketing system that includes building models of predicted customer profiles, embedding the models within an online analytical processing tool, and generating scores for a prospective customer in the database based on the predicted customer profiles wherein the online analytical processing tool generates the scores by combining the models. More specifically, neither Melchione nor Pham, considered alone or in combination, describe nor suggest embedding models within an online analytical processing tool, and generating scores for a prospective customer wherein the online analytical processing tool generates the scores by combining the models. Rather, Melchione describes a central database that receives and standardizes information for use by a financial institution in generating lists of sales leads for marketing campaigns; and Pham describes a data mining system that permits discovery, evaluation, and prediction of the correlative factors of data. Accordingly, Applicants respectfully submit that Claim 1 is patentable over Melchione in view of Pham.

When the recitations of Claims 2 and 3 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2 and 3 likewise are patentable over Melchione in view of Pham.

Claim 10 recites a system configured for targeting market segments that includes a customer database, a graphical user interface for entering marketing campaign data, and “models of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool, said online analytical processing tool configured to combine said models.”

Neither Melchione nor Pham, considered alone or in combination, describe nor suggest a system configured for targeting market segments that includes models of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool, wherein the online analytical processing tool is configured to combine the models. Rather,

Melchione describes a sales process support system that generates lists of sales leads for marketing campaigns; and Pham describes a data mining system that permits discovery, evaluation, and prediction of the correlative factors of data. Accordingly, Applicants respectfully submit that Claim 10 is patentable over Melchione in view of Pham.

When the recitations of Claims 11 and 15 are considered in combination with the recitations of Claim 10, Applicants submit that dependent Claims 11 and 15 likewise are patentable over Melchione.

Furthermore, the rejection of Claims 2, 3, 11, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Melchione in view of Pham is further traversed on the grounds that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Melchione nor Pham, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Melchione with Pham because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching. Rather, only the conclusory statement that "[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to combine Melchione scoring system with Pham's OLAP system to derive the modeling features of the claimed invention" suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levensgood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not

based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Melchione is cited for teaching a sales process support system and method for identifying sales targets using a centralized database to improve marketing success which utilizes customer profiles and a scoring system to predict customer activity; and Pham is cited for teaching using an OLAP and building a knowledge model to predict behavior. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants requests that the Section 103 rejection of Claims 2, 3, 11, and 15 be withdrawn.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claims 2, 3, 11, and 15 be withdrawn.

The rejection of Claims 6-8, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Melchione in view of Sheppard (U.S. Patent No. 6,026,397) is respectfully traversed.

Melchione is described above. Sheppard describes a system (10) for analyzing a data file that contains a plurality of data records with each data record containing a plurality of



parameters. System (10) includes an input (40) for receiving the data file and a data processor (32) that has at least one of several data processing functions. These data processing functions include a segmentation function (34) for segmenting the data records into a plurality of segments based on the parameters. The data processing functions also include a clustering function (36) for clustering the data records into a plurality of clusters that contain data records having similar parameters. A prediction function (38) for predicting expected future results from the parameters in the data records may also be provided with the data processor (32).

Claims 6-8 depend from independent Claim 1. Claim 1 recites a method for increasing efficiency of a marketing system that includes a database containing customer demographic data, and the steps of “building models of predicted customer profiles, embedding the models within an online analytical processing tool, and generating scores for a prospective customer in the database based on the predicted customer profiles wherein the online analytical processing tool generates the scores by combining the models.”

Sheppard is cited for teaching the probability of attrition and predicting customer behavior. Although Sheppard does provide that “it may be used to predict customer or potential customer behavior, including, for example, propensity to respond to direct mail or telemarketing, product preference, profitability, credit risk, and probability of attrition” at Column 2, lines 44-48, to the extent understood, Sheppard does not teach nor suggest the claimed invention.

Neither Melchione nor Sheppard, considered alone or in combination, describe nor suggest a method for increasing efficiency of a marketing system that includes building models of predicted customer profiles, embedding the models within an online analytical processing tool, and generating scores for a prospective customer in the database based on the predicted customer profiles wherein the online analytical processing tool generates the scores by combining the models. Rather, Melchione describes a sales process support system that receives and standardizes information for use by a financial institution in generating lists of sales leads for marketing campaigns; and Sheppard describes a system for analyzing a data file that includes a

data processor that has at least one of several data processing functions including a segmentation function, a clustering function, and a prediction function. Accordingly, Applicants respectfully submit that Claim 1 is patentable over Melchione in view of Sheppard.

When the recitations of Claims 6-8 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 6-8 likewise are patentable over Melchione in view of Sheppard.

Claim 14 depends from Claim 10. Claim 10 recites a system configured for targeting market segments that includes a customer database, a graphical user interface for entering marketing campaign data, and “models of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool, said online analytical processing tool configured to combine said models.”

Neither Melchione nor Sheppard, considered alone or in combination, describe nor suggest a system configured for targeting market segments that includes a customer database, a graphical user interface for entering marketing campaign data, and models of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool, wherein the online analytical processing tool is configured to combine the models. Rather, Melchione describes a sales process support system that receives and standardizes information for use by a financial institution in generating lists of sales leads for marketing campaigns; and Sheppard describes a system for analyzing a data file that includes a data processor that has at least one of several data processing functions including a segmentation function, a clustering function, and a prediction function. Accordingly, Applicants respectfully submit that Claim 10 is patentable over Melchione in view of Sheppard.

When the recitations of Claim 14 are considered in combination with the recitations of Claim 10, Applicants submit that dependent Claim 14 likewise is patentable over Melchione in view of Sheppard.

Furthermore, the rejection of Claims 6-8, and 14 under 35 U.S.C. § 103(a) as being unpatentable over Melchione in view of Sheppard is further traversed on the grounds that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Melchione nor Sheppard, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Melchione with Sheppard because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching. Rather, only the conclusory statement that "[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to combine Melchione predicting and scoring system with Sheppard's probability of default to derive the modeling features of the claimed invention" suggests combining the disclosures.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. The present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Melchione is cited for teaching a sales process support system and method for identifying sales targets using a centralized database to improve marketing success, customer profiles, a scoring system to predict customer activity, and propensity models; and Sheppard is cited for teaching the probability of attrition, profitability, and associated risks. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is

impermissible, and for this reason alone, Applicants requests that the Section 103 rejection of Claims 6-8, and 14 be withdrawn.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claims 6-8, and 14 be withdrawn.

The rejection of Claims 16 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Melchione in view of Pham in further view of Sheppard is respectfully traversed.

Melchione, Pham, and Sheppard are all described above.

Claims 16 and 17 depend from independent Claim 10. Claim 10 recites a system configured for targeting market segments that includes a customer database, a graphical user interface for entering marketing campaign data, and “models of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool, said online analytical processing tool configured to combine said models.”

None of Melchione, Pham, or Sheppard, considered alone or in combination, describe nor suggest a system configured for targeting market segments that includes a customer database, a graphical user interface for entering marketing campaign data, and models of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool, wherein the online analytical processing tool is configured to combine the models. More specifically, none of Melchione, Pham, or Sheppard, considered alone or in combination, describe nor suggest a system that includes models of predicted customer profiles that are embedded on an online analytical processing tool, wherein the online analytical processing tool is configured to combine the models.

Rather, Melchione describes a sales process support system that receives and standardizes information for use by a financial institution in generating lists of sales leads for marketing campaigns; Pham describes a data mining system that permits discovery, evaluation, and prediction of the correlative factors of data; and Sheppard describes a system for analyzing a data

file that includes a data processor that has at least one of several data processing functions including a segmentation function, a clustering function, and a prediction function. Accordingly, Applicants respectfully submit that Claim 10 is patentable over Melchione in view of Pham in further view of Sheppard.

When the recitations of Claims 16 and 17 are considered in combination with the recitations of Claim 10, Applicants submit that dependent Claims 16 and 17 likewise are patentable over Melchione in view of Pham in further view of Sheppard.

Furthermore, the rejection of Claims 16 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Melchione in view of Pham in further view of Sheppard is further traversed on the grounds that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Melchione, Pham, or Sheppard, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Melchione with Pham and Sheppard because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicants' own teaching. Rather, only the conclusory statement that "[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to combine Melchione/Pham predicting and scoring system with Sheppard's behavior propensity models derive the prediction features of the claimed invention" suggests combining the disclosures.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. The present Section 103 rejection appears to be based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention.

Specifically, Melchione and Pham are cited for teaching a sales process support system and method for identifying sales targets using a centralized database to improve marketing success, customer profiles, a scoring system to predict customer activity, propensity models, and OLAP; and Sheppard is cited for teaching predicting customer behavior, profitability, and associated risks. Since there is no teaching nor suggestion in the cited art for the claimed combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants requests that the Section 103 rejection of Claims 16 and 17 be withdrawn.

For at least the reasons set forth above, Applicants respectfully request that the 35 U.S.C. § 103(a) rejection of Claims 16 and 17 be withdrawn.

Newly added Claim 19 recites a method for increasing efficiency of a marketing system, the system comprising a database containing customer demographic data, wherein the method includes “building models of predicted customer profiles...embedding the models within an online analytical processing tool...and generating scores for a prospective customer in the database based on the predicted customer profiles wherein the online analytical processing tool determines a sequential order for combining the models and generates the scores by combining the models.”

None of the art cited in the Office Action, considered alone or in combination, describe or suggest a method for increasing efficiency of a marketing system that includes an online analytical processing tool that determines a sequential order for combining models and generates scores by combining the models. Accordingly, Applicants respectfully submit that Claim 19 is patentable over the cited art.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,

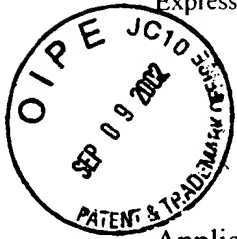
A handwritten signature in cursive script, appearing to read "Daniel M. Fitzgerald".

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PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Samra et al.

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Serial No.: 09/474,588

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Art Unit: 3623

Filed: December 29, 1999

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Examiner: James A. Reagan

For: METHODS AND SYSTEMS  
FOR CREATING MODELS FOR  
MARKETING CAMPAIGNS

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**SUBMISSION OF MARKED UP PARAGRAPHS AND CLAIMS**

Hon. Commissioner for Patents  
Washington, D.C. 20231

Submitted herewith are marked up paragraphs and Claims in accordance with 37 C.F.R.  
1.121(b)(1)(ii) and 1.121(c)(1)(ii).

IN THE SPECIFICATION

Please delete the specification and replace with the following specification:

**BACKGROUND OF THE INVENTION**

This invention relates generally to marketing and, more particularly, to methods and systems for identifying and marketing to segments of potential customers.

Typical marketing strategies involve selecting a particular group based on demographics or other characteristics, and directing the marketing effort to that group. Known methods typically do not provide for proactive and effective consumer relationship management or segmentation of the consumer group to increase efficiency and returns on the marketing



campaign. For example, when a mass mailing campaign is used, the information used to set up the campaign is not segmented demographically to improve the efficiency of the mailing. The reasons for these inefficiencies include the fact that measurement and feedback is a slow manual process that is limited in the depth of analysis. Another reason is that data collected from different consumer contact points are not integrated and thus does not allow a marketing organization a full consumer view.

Results of this inefficient marketing process include loss of market share, increased attrition rate among profitable customers, and slow growth and reduction in profits.

#### BRIEF SUMMARY OF THE INVENTION

Marketing campaign systems and methods to increase efficiency of a marketing campaign are disclosed. The method uses a system including a database containing customer demographic data and includes the steps of building models of predicted customer profiles and generating scores for prospective customers in the database based on predicted customer profiles.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram of an exemplary embodiment of a web-based global modeling architecture;

Figure 2 is a block diagram of an exemplary embodiment of a targeting engine;

Figure 3 is an exemplary graphical user interface for pre-selecting mailing criteria;

Figure 4 is an exemplary user interface for the input of marketing criteria;

Figure 5 is an exemplary user interface for selection of structures;

Figure 6 is an exemplary user interface for selection of campaigns;

Figure 7 is an exemplary user interface for creation of a selection table; and

Figure 8 is an exemplary user interface for a gains chart.

## DETAILED DESCRIPTION OF THE INVENTION

Exemplary embodiments of processes and systems for integrating targeting information to facilitate identifying potential sale candidates for marketing campaigns are described below in detail. In one embodiment, the system is internet based. The exemplary processes and systems combine advanced analytics, On Line Analytical Processing (OLAP) and relational data base systems into an infrastructure. This infrastructure gives users access to information and automated information discovery in order to streamline the planning and execution of marketing programs, and enable advanced customer analysis and segmentation of capabilities.

The processes and systems are not limited to the specific embodiments described herein. In addition, components of each process and each system can be practiced independent and separate from other components and processes described herein. Each component and process can be used in combination with other components and processes.

Figure 1 is a block diagram of an exemplary embodiment of a web-based global modeling architecture 10. Data from various international markets 12 is compiled in a consumer database 14. Consumer database 14 contains user defined information such as age, gender, marital status, income, transaction history, and transaction measures. Customer database 14 is accessible by a server 16. Server 16 stores the consumer database 14 in a relational database such that the consumer data is accessible to a targeting engine (not shown in Figure 1) which takes data input and based upon modeling generates user interfaces 18. Architecture 10 may also be client/server based.

Figure 2 illustrates a marketing system 20. Included in marketing system 20 are a targeting engine 22 and a plurality of data inputs and outputs. Data inputs include a customer database 24, selection criteria 26, previous campaign results 28 and marketing data 30. Targeting engine 22 generates targeting mailing lists 32, campaign and data structures 34 and gains charts 36. Historical campaign and data structures 34 are reusable by targeting engine 22. Targeting engine 22 also generates outputs to a user interface 38, typically in a graphic format. Targeting engine 22 streamlines the planning and execution of marketing programs and enables advanced customer analysis and segmentation capabilities. Targeting engine 22 further delivers information in a proactive and timely manner to enable a user to gain a competitive edge. Targeting engine 22 accomplishes these goals through the use of models.

## MODELS

Models are predicted customer profiles based upon historic data. Any number of models can be combined as an OLAP cube which takes on the form of a multi dimensional structure to allow immediate views of dimensions including for example, risk, attrition, and profitability.

Models are embedded within targeting engine 22 as scores associated with each customer, the scores can be combined to arrive at relevant customer metrics. In one embodiment, models used are grouped under two general categories, namely marketing and risk. Examples of marketing models include: a net present value / profitability model, a prospect pool model, a net conversion model, an early termination (attrition) model, a response model, a revolver model, a balance transfer model, and a reactivation model. A propensity model is used to supply predicted answers to questions such as, how likely is this customer to: close out an account early, default, or avail themselves to another product (cross-sell). As another example, profitability models guide a user to optimized marketing campaign selections based on criteria selected from the consumer database 24. A payment behavior prediction model is included that estimates risk. Other examples of risk models are a delinquency and bad debt model, a fraud detection model, a bankruptcy model, and a hit and run model. In addition, for business development, a client prospecting model is used. Use of models to leverage consumer information ensures right value propositions are offered to the right consumer at the right time by tailoring messages to unique priorities of each customer.

## TARGETING ENGINE

Targeting engine 22 combines the embedded models described above to apply a score to each customer's account and create a marketing program to best use such marketing resources as mailing, telemarketing, and internet online by allocating resources based on consumer's real value. Targeting engine 22 maintains a multi-dimensional customer database based in part on customer demographics. Examples of such customer related demographics are: age, gender, income, profession, marital status, or how long at a specific address. When applied in certain countries, that fact that a person is a foreign worker could be relevant. The examples listed above are illustrative only and not intended to be exhaustive. Once a person has been a customer, other historical demographics can be added to the database, by the sales force, for use in future targeting. For example, what loan products a customer has previously purchased is important when it comes to marketing that person a product in the future in determining a likelihood of a customer response. To illustrate, if a person has purchased an automobile loan within the last six months, it probably is unreasonable to expend marketing effort to him or her in an automobile financing campaign.

However a cash loan or home equity loan may still be of interest to the automobile loan purchaser. In deciding whether to market to him or her, other criteria that has been entered into the targeting engine 22 database in the form of a transaction database can be examined. The transaction database contains database elements for tracking performance of previously purchased products, in this case the automobile loan. Information tracked contains, for example,

how often payments have been made, how much was paid, in total and at each payment, any arrears, and the percentage of the loan paid. Again the list is illustrative only. Using information of this type, targeting engine 22 can generate a profitability analysis by combining models to determine a probability score for response, attrition and risk. Customers are rank ordered by probability of cross-sell response, attrition, risk, and net present value.. For example, if a consumer pays a loan off within a short time, that loan product was not very profitable. The same can be said of a product that is constantly in arrears. The effort expended in collection efforts tends to reduce profitability.

When a marketer embarks on a campaign, they will input into targeting engine the desired size of the campaign. Using 60,000 as an example, the marketer inputs the target consumer selection criteria 26, some subset of the demographics listed above, into targeting engine 22.

Targeting engine uses the stored databases and generates a potential customer list based on scores based on demographics and the propensity to buy another loan product and expected profitability. Customers can be targeted by the particular sales office, dealers, product type, and demographic profile. Targeting engine enables a user to manipulate and derive scores from the information stored within the consumer and structure databases. These scores are used to rank order candidate accounts for marketing campaigns based upon model scores embedded within the consumer and structure databases and are used in a campaign selection. Scores are generated with a weight accorded the factors, those factors being the demographics and the models used.

Using the scores and profitability targeting engine generates a list of potential profitable accounts, per customer and / or per product, in a rank ordering from a maximum profit to a zero profit versus cost.

As candidate accounts are ranked by a selected model score, targeting engine 22 (shown in Figure 2) performs calculations at which marginal returns become zero, and the user is alerted to an optimal mailing depth which can override initial manually selected campaign size to form a marketing campaign customer list. The selected marketing campaign results in a database table which has the customer identification number, relevant model scores, flags that indicate whether the customer is a targeted or a random selection, and an indicator for the product offered. As shown in Figure 7, a user can use a user interface 80 to choose a particular database table. As an example, targeting engine 22 may determine that a mailing of 40,000 units, as opposed to the requested 60,000 units, is the maximum profitable for the example campaign. Conversely, targeting engine 22 may also determine that, for the requested campaign, 100,000 units have profit potential and will flag that information to the marketer. To arrive at expected profitability numbers, targeting engine 22, has the capability to deduct costs, such as mailing cost, from a proposed campaign.

#### GRAPHICAL USER INTERFACE

Users input the target consumer selection criteria 26 into targeting engine 22 through a simple graphical user interface 38. An exemplary example of a graphical user interface is shown in Figure 3. In this exemplary example, one of the options available to a user is to input pre-

selection criteria for a mailing campaign 40. Once the user selects the mailing pre-selection criteria 40 option, another user interface 50, one possible example is Figure 4, allows the user to input the marketing criteria. Example marketing criteria shown are age 52, credit line 54, a profession code 56, and a plurality of risk factors 58.

Once a user has input the marketing campaign pre-selection criteria into targeting engine, that criteria is retained by a targeting engine database. Details of all available criteria are retained as entries in a database table and duplication of previous efforts is avoided.

Marketing campaigns can be stored within targeting engine 22. An exemplary example showing a graphical interface 60 used to choose previous marketing campaigns is shown in Figure 5. In this example, a user can choose between Campaign1 62 and Campaign2 64. Figure 6 is a user interface 70 showing structures associated with Campaign2 64. Structure1 72 indicates that analysis of the campaign based on age, gender, credit line and the targeting model is available. Users can build new structures on an ad-hoc basis by choosing the Create New Structure 74 on user interface 70. By stacking structures of different campaigns in chronological order trends within segments can be discerned. As a result of the storage of marketing campaign structures within targeting engine database, those structures having time as one of the database elements allow a user to define trends whereby a marketing campaign history structure which is automatically analyzed by targeting engine 22.



## TREND ANALYSIS

A trend analysis is a way to look at multiple marketing campaigns over time and is also a way to evaluate the models used and define trends. As an example of trend analysis, the user can determine where a response rate has been changing or where profitability has been changing or look at the number of accounts being closed. A user can also analyze particular population segments over time.

Trend analysis can be used to track how a particular segment, males from age 25 – 35 with an auto loan for example, may change in a propensity to avail themselves to other loan products over time.

## CAMPAIGN ANALYSIS

A user can create marketing test cells in the targeted accounts. Test cells are created using a range of selection criteria and random assignments. Accounts satisfying selection criteria are counted. A marketing cell code for each account is assigned in the campaign table. The user can then output the contents of the campaign table to a file that can be exported to print a campaign mailing.

A user can profile selected accounts and assign a score for any campaign against a list of user defined dimensions. Assigning a score allows results to be rank ordered. Profiling shows how targeted accounts differ from non-selected accounts and is used to ensure the campaign is reaching the target base of the campaign. Profiling dimensions are selected during the initial

customization process. Profiling can be done directly on a portfolio without any reference to marketing campaigns.

Targeting engine 22 also accepts marketing campaign results based upon each customer. Additional information can be appended onto the marketing campaign result files that become part of the consumer database. Exemplary examples of information that is added to the marketing campaign result files are: loan size, loan terms, and risk score. Campaign analysis is done by comparing the original marketing campaign customer list against marketing campaign results. Targeting engine 22 then profiles this comparison information to construct gains charts.

Maintaining feedback into targeting engine 22 improves subsequent modeling cycles. In the 60,000 example campaign explained previously, assume the size of the actual campaign after targeting engine applied a model was 40,000 mailings. Information regarding who responded and how much was lent, for example, is input into targeting engine. Analysis facilitates a determination of how good the model performed when it told the marketer 40,000 mailings was the optimal campaign size. Analysis is accomplished in one embodiment by the use of gains charts. As an example, the gains charts for the 40,000 mailings campaign may indicate that a mailing to 10% of the group may actually obtain 20% of all potential responders.

An exemplary gains chart is displayed on the user interface 90 shown in Figure 8. As shown in Figure 8, when models are used to generate prospective customers for a marketing campaign, a larger number of responses per campaign size is generated, thereby increasing the efficiency of the marketing campaign and identifying risks such as delinquency and fraud. A

2. (once amended) A method according to Claim 1 wherein said step of [building models of predicted customer profiles] generating scores for a prospective customer in the database based on the predicted customer profiles further comprises the step of using [an] the online analytical processing tool that combines models in the form of a multidimensional structure.

3. (once amended) A method according to Claim 1 wherein said step of [building models of predicted customer profiles] generating scores for a prospective customer in the database based on the predicted customer profiles further comprises the step of using [an] the online analytical processing tool with dimensions comprising risk, attrition, and profitability.

9. (once amended) A method according to Claim 1 wherein said step of generating scores for a prospective customer in the database based on the predicted customer profiles further comprises the step of guiding a user to optimize marketing campaign selections based on criteria from a customer database.

10. (once amended) A system configured for targeting market segments comprising:

a customer database;

a graphical user interface for entering marketing campaign data; and

models of predicted customer profiles based upon historic data that are embedded on an online analytical processing tool, said online analytical processing tool configured to combine said models.

11. (once amended) A system according to Claim 10 wherein said models are embedded in [an] said online analytical processing tool that takes the form of a multidimensional structure.

Please add the following claim:

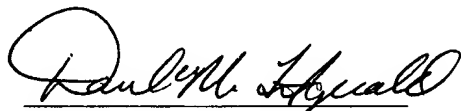
19. (new claim) A method for increasing efficiency of a marketing system, the system comprising a database containing customer demographic data, said method including the steps of:

building models of predicted customer profiles;

embedding the models within an online analytical processing tool; and

generating scores for a prospective customer in the database based on the predicted customer profiles wherein the online analytical processing tool determines a sequential order for combining the models and generates the scores by combining the models.

Respectfully Submitted,



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